

H1323

LVL LOT # :0104L576

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
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B11TV8

PH	001	W	01LPH031	04/16/01	04/27/01	04/27/01.
PH	001 REP	W	01LPH031	04/16/01	04/27/01	04/27/01

B11TV9

PH	002	W	01LPH031	04/16/01	04/27/01	04/27/01
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B11TWO

PH	003	W	01LPH031	04/16/01	04/27/01	04/27/01
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B11TW1

PH	004	OI 01LPH031	04/16/01	04/27/01	04/27/01
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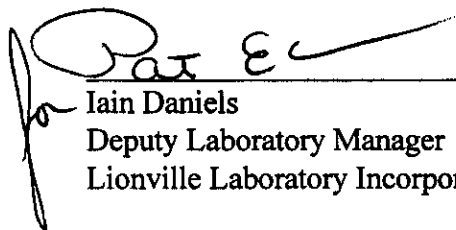
Analytical Report

Client: TNU-HANFORD B01-063 H1323
LVL#: 0104L576

W.O.#: 11343-606-001-9999-00
Date Received: 04-20-01

INORGANIC NARRATIVE

1. This narrative covers the analysis of 1 oil and 3 water samples.
2. The samples were prepared and analyzed in accordance with the methods indicated on the attached glossary.
3. Sample holding times as required by the method and/or contract were met.
4. The cooler temperature was recorded on the chain of custody.
5. The replicate analysis was within the 20% Relative Percent Difference (RPD) control limit.
6. The result for sample B11TW1 was reported based upon a pH paper determination due to the coating effect of the sample matrix on the pH probe.
7. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.


Iain Daniels
Deputy Laboratory Manager
Lionville Laboratory Incorporated

05-07-01
Date

njpl04-576

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 10 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	<u>ASTM</u>	<u>SW846</u>	<u>OTHER</u>
% Ash	— D2216-80		
% Moisture	— D2216-80		— ILMO4.0 (e)
% Solids	— D2216-80		— ILMO4.0 (e)
% Volatile Solids	— D2216-80		
ASTM Extraction in Water	— D3987-81/85		
BTU	— D240-87		
CEC		— 9081	— c
Chromium VI		— 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		— 1110(mod) — 9045C	
Cyanide, Total		— 9010B	— ILMO4.0 (e)
Cyanide, Reactive		— Section 7.3/9014	
Halides, Extractable Organic		— 9020B	— EPA 600/4/84-008
Halides, Total		— 9020B	— EPA 600/4/84-008
EP Toxicity		— 1310A	
Flash Point		— 1010	
Ignitability		— 1010	
Oil & Grease		— 9071A	
Carbon, Total Organic		— 9060	— Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	— D240-87(mod)	— 5050	
Petroleum Hydrocarbons, Total Recoverable		— 9071	— EPA 418.1
pH, Soil		✓ 9045C / 9041A(mod.)	
Sulfide, Reactive		— Section 7.3/9030B	
Sulfide		— 9030B(mod)	
Specific Gravity	— D1429-76C/	— D5057-90	
Sulfur, Total		— 9056	
Synthetic Preparation Leach		— 1312	
Paint Filter		— 9095A	

Other:

Method:

Other:

Method

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- * = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

- MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.
2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
 - a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
 - b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
 - c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
 - d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
 - e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
 - f. Code of Federal Regulations.

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INORGANICS DATA SUMMARY REPORT 05/07/01

Lionville Laboratory, Inc.

LVL LOT #: 0104L576

CLIENT: TNUHANFORD B01-063 H1323
WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B11TW8	pH	5.4	SOIL pH	0.01	1.0
-002	B11TW9	pH	5.1	SOIL pH	0.01	1.0
-003	B11TW0	pH	5.3	SOIL pH	0.01	1.0
-004	B11TW1	pH	6.0	SOIL pH	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/07/01

CLIENT: TNUHANFORD B01-063 H1323

LVL LOT #: 0104L576

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE RPD	DILUTION FACTOR (REP)
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-001REP	B11TV8	pH	5.4	5.3 2.0	1.0

06
05 1/21

ALL FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

[illegible]

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B01-063-4		Page <u>1</u> of <u>1</u>					
Collector THOMAS GS		Company Contact LERCH JA		Telephone No. 509-373-5904		Project Coordinator TRENT, SJ		Price Code <u>3D</u> Data Turnaround <u>7 days</u>					
Project Designation 600-23 Anomalous Waste Characterization - Other Liquid		Sampling Location 600-23 DIG SITE		SAF No. B01-063		Air Quality <input type="checkbox"/>							
Ice Chest No. <u>BH1-94 20f2)</u>		Field Logbook No. EL-1518		COA <u>R600232E00</u>		Method of Shipment FED EX							
Shipped To TMA/RECRA		Offsite Property No. <u>A010250</u>		Bill of Lading/Air Bill No. <u>42357954-3808</u>									
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation		A Cool 4C		C None		B Cool 4C			
				Type of Container		Gs*		<u>AG</u>		<u>AG</u>			
				No. of Container(s)		1		1		1			
				Volume		40mL		120mL		1000mL			
Special Handling and/or Storage				VOA - 8260A (TCL)		pH (Soil) - 9045		Semi-VOA - 8270A (TCL)					
SAMPLE ANALYSIS													
Sample No.		Matrix *		Sample Date		Sample Time							
B11TV8		OTHER LIQUID		4/16/01		0807		X		X			
B11TV9		OTHER LIQUID		4/16/01		0825		X		X			
B11TW0		OTHER LIQUID		4/16/01		0910		X		X			
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *					
Relinquished By <u>Greg Thomas</u>		Date/Time <u>4/16/01 1530</u>		Received By <u>Greg Thomas</u>		Date/Time <u>4/16/01 1530</u>		<p>Samples stored in Ref. # <u>2B</u> at the 3728 Shipping Facility on <u>4/16/01</u>. Collector not available to relinquish samples on <u>4/16/01</u> for shipment.</p> <p><u>R.T.</u> <u>4/19/01</u></p>					
Relinquished By <u>R. T. L. Thoren</u>		Date/Time <u>4/19/01 0900</u>		Received By <u>R. T. L. Thoren</u>		Date/Time <u>4/19/01 0930</u>							
Relinquished By <u>R. T. L. Thoren</u>		Date/Time <u>4/19/01 0930</u>		Received By <u>FED EX</u>		Date/Time <u>4/20/01 0920</u>							
Relinquished By <u>FED EX</u>		Date/Time <u>4/20/01 0920</u>		Received By <u>T. Keppel</u>		Date/Time <u>4/20/01 0920</u>							
Relinquished By		Date/Time		Received By		Date/Time							
Relinquished By		Date/Time		Received By		Date/Time							
LABORATORY SECTION		Received By		Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time					

SDG#: 0104LS76

SAF# B01-065

Chain of Custody # B01-0603-4,5

1. Custody Seals on shipping container intact? Yes ☒ No ☐
2. Custody Seals dated and signed? Yes ☒ No ☐
3. Chain-of-Custody record present? Yes ☒ No ☐
4. Cooler temperature 6.10C
5. Vermiculite/packing materials is Wet ☐ Dry ☒
6. Number of samples in shipping container: 12
7. Sample holding times exceeded? Yes ☐ No ☒

8. Samples have: _____ tape _____ hazard labels
 _____ custody seals _____ appropriate sample labels

9. Samples are: ~~_____~~ in good condition _____ leaking
_____ broken _____ have air bubbles

10. Were any anomalies identified in sample receipt? Yes ☐ No ☒
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Therapie / LULI Date: 4-20-01

Telephoned to: _____ On _____ By _____



Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B01-063 H1323

DATE RECEIVED: 04/20/01

LVL LOT # :0104L576

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B11TW1						
SILVER, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
SILVER, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
SILVER, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
ALUMINUM, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
ALUMINUM, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
ALUMINUM, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
ARSENIC, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
ARSENIC, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
ARSENIC, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
BARIUM, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
BARIUM, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
BARIUM, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
BERYLLIUM, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
BERYLLIUM, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
BERYLLIUM, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
CALCIUM, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
CALCIUM, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
CALCIUM, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
CADMIUM, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
CADMIUM, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
CADMIUM, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
COBALT, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
COBALT, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
COBALT, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
CHROMIUM, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
CHROMIUM, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
CHROMIUM, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
COPPER, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
COPPER, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
COPPER, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
IRON, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
IRON, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
IRON, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
MERCURY, TOTAL	004	OI	01C0115	04/16/01	04/24/01	04/25/01
MERCURY, TOTAL	004 REP	OI	01C0115	04/16/01	04/24/01	04/25/01

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B01-063

DATE RECEIVED: 04/20/01

LVL LOT # :0104L576

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	004 MS	OI	01C0115	04/16/01	04/24/01	04/25/01
POTASSIUM, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
POTASSIUM, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
POTASSIUM, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
MAGNESIUM, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
MAGNESIUM, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
MAGNESIUM, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
MANGANESE, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
MANGANESE, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
MANGANESE, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
SODIUM, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
SODIUM, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
SODIUM, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
NICKEL, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
NICKEL, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
NICKEL, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
LEAD, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
LEAD, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
LEAD, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
ANTIMONY, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
ANTIMONY, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
ANTIMONY, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
SELENIUM, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
SELENIUM, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
SELENIUM, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
THALLIUM, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
THALLIUM, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
THALLIUM, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
VANADIUM, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
VANADIUM, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
VANADIUM, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01
ZINC, TOTAL	004	OI	01L0217	04/16/01	04/25/01	04/25/01
ZINC, TOTAL	004 REP	OI	01L0217	04/16/01	04/25/01	04/25/01
ZINC, TOTAL	004 MS	OI	01L0217	04/16/01	04/25/01	04/25/01

LAB QC:

SILVER LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
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Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B01-063

DATE RECEIVED: 04/20/01

LVL LOT # :0104L576

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SILVER, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
ALUMINUM LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
ALUMINUM, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
ARSENIC LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
ARSENIC, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
BARIUM LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
BARIUM, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
BERYLLIUM LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
BERYLLIUM, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
CALCIUM LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
CALCIUM, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
CADMIUM LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
CADMIUM, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
COBALT LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
COBALT, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
CHROMIUM LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
CHROMIUM, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
COPPER LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
COPPER, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
IRON LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
IRON, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
MERCURY LABORATORY	LC1 BS	S	01C0115	N/A	04/24/01	04/25/01
MERCURY, TOTAL	MB1	S	01C0115	N/A	04/24/01	04/25/01
POTASSIUM LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
POTASSIUM, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
MAGNESIUM LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
MAGNESIUM, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
MANGANESE LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
MANGANESE, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
SODIUM LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
SODIUM, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
NICKEL LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
NICKEL, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
LEAD LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
LEAD, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
ANTIMONY LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
ANTIMONY, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
SELENIUM LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B01-063

DATE RECEIVED: 04/20/01

LVL LOT # :0104L576

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
THALLIUM LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
THALLIUM, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
VANADIUM LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
VANADIUM, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01
ZINC LABORATORY	LC1 BS	S	01L0217	N/A	04/25/01	04/25/01
ZINC, TOTAL	MB1	S	01L0217	N/A	04/25/01	04/25/01



Analytical Report

Client: TNU-HANFORD B01-063
LVL#: 0104L576
SDG/SAF#: H1323/B01-063

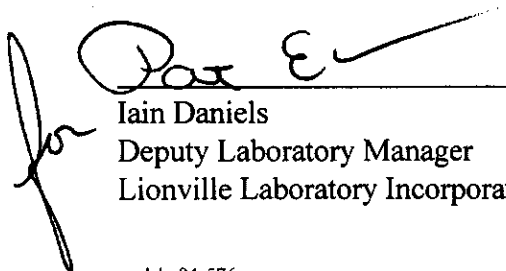
W.O.#: 11343-606-001-9999-00
Date Received: 04-20-01

METALS CASE NARRATIVE

1. This narrative covers the analyses of 1 oil sample.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. The cooler temperature has been recorded on the Chain of Custody.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. The preparation/method blank for 1 analyte was outside method criteria. {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
 - a.) The MB result for Sodium was greater than the Practical Quantitation Limit (PQL) {3 x the (IDL) Instrument Detection Level} and the sample read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. All matrix spike (MS) recoveries were within the 75-125% control limits. Refer to the Inorganics Accuracy Report.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 16 pages.

11. The duplicate analyses for 3 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
12. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
13. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.
14. As of January 27, 2001, Recra LabNet Philadelphia became Lionville Laboratory Incorporated. Some forms may still reference Recra LabNet Philadelphia.


Iain Daniels
Deputy Laboratory Manager
Lionville Laboratory Incorporated

gmb/m04-576

05-07-01
Date

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Lot#: 0104L576

Leaching Procedure: ☐ 1310 ☐ 1311 ☐ 1312 ☐ Other: _____

CLP Metals ☐ Digestion and ☐ Analysis Methods: ☐ ILM03.0 ☐ ILM04.0

Metals Digestion Methods: ☐ 3005A ☐ 3010A ☐ 3015 ☐ 3020A ☒ 3050B ☐ 3051 ☐ 200.7 ☐ SS17
☐ Other: _____

Metals Analysis Methods

	SW846	EPA	STD MTD	EPA OSWR	USATHAMA
Aluminum	<input checked="" type="checkbox"/> 6010B	<input type="checkbox"/> 200.7			<input type="checkbox"/> 99
Antimony	<input checked="" type="checkbox"/> 6010B <input type="checkbox"/> 7041 ^s	<input type="checkbox"/> 200.7 <input type="checkbox"/> 204.2			<input type="checkbox"/> 99
Arsenic	<input checked="" type="checkbox"/> 6010B <input type="checkbox"/> 7060A ^s	<input type="checkbox"/> 200.7 <input type="checkbox"/> 206.2	<input type="checkbox"/> 3113B		<input type="checkbox"/> 99
Barium	<input checked="" type="checkbox"/> 6010B	<input type="checkbox"/> 200.7			<input type="checkbox"/> 99
Beryllium	<input checked="" type="checkbox"/> 6010B	<input type="checkbox"/> 200.7			<input type="checkbox"/> 99
Bismuth	<input type="checkbox"/> 6010B ⁱ	<input type="checkbox"/> 200.7 ⁱ		<input type="checkbox"/> 1620	<input type="checkbox"/> 99
Boron	<input type="checkbox"/> 6010B	<input type="checkbox"/> 200.7			<input type="checkbox"/> 99
Cadmium	<input checked="" type="checkbox"/> 6010B <input type="checkbox"/> 7131A ^s	<input type="checkbox"/> 200.7 <input type="checkbox"/> 213.2			<input type="checkbox"/> 99
Calcium	<input checked="" type="checkbox"/> 6010B	<input type="checkbox"/> 200.7			<input type="checkbox"/> 99
Chromium	<input checked="" type="checkbox"/> 6010B <input type="checkbox"/> 7191 ^s	<input type="checkbox"/> 200.7 <input type="checkbox"/> 218.2			<input type="checkbox"/> SS17
Cobalt	<input checked="" type="checkbox"/> 6010B	<input type="checkbox"/> 200.7			<input type="checkbox"/> 99
Copper	<input checked="" type="checkbox"/> 6010B <input type="checkbox"/> 7211 ^s	<input type="checkbox"/> 200.7 <input type="checkbox"/> 220.2			<input type="checkbox"/> 99
Iron	<input checked="" type="checkbox"/> 6010B	<input type="checkbox"/> 200.7			<input type="checkbox"/> 99
Lead	<input checked="" type="checkbox"/> 6010B <input type="checkbox"/> 7421 ^s	<input type="checkbox"/> 200.7 <input type="checkbox"/> 239.2	<input type="checkbox"/> 3113B		<input type="checkbox"/> 99
Lithium	<input type="checkbox"/> 6010B <input type="checkbox"/> 7430 ⁱ	<input type="checkbox"/> 200.7		<input type="checkbox"/> 1620	<input type="checkbox"/> 99
Magnesium	<input checked="" type="checkbox"/> 6010B	<input type="checkbox"/> 200.7			<input type="checkbox"/> 99
Manganese	<input checked="" type="checkbox"/> 6010B	<input type="checkbox"/> 200.7			<input type="checkbox"/> 99
Mercury	<input type="checkbox"/> 7470A ^s <input checked="" type="checkbox"/> 7471A ^s	<input type="checkbox"/> 245.1 ^s <input type="checkbox"/> 245.5 ^s			<input type="checkbox"/> 99
Molybdenum	<input checked="" type="checkbox"/> 6010B	<input type="checkbox"/> 200.7			<input type="checkbox"/> 99
Nickel	<input checked="" type="checkbox"/> 6010B	<input type="checkbox"/> 200.7			<input type="checkbox"/> 99
Potassium	<input checked="" type="checkbox"/> 6010B <input type="checkbox"/> 7610 ⁱ	<input type="checkbox"/> 200.7 <input type="checkbox"/> 258.1 ⁱ			<input type="checkbox"/> 99
Rare Earths	<input type="checkbox"/> 6010B ⁱ	<input type="checkbox"/> 200.7 ⁱ		<input type="checkbox"/> 1620	<input type="checkbox"/> 99
Selenium	<input checked="" type="checkbox"/> 6010B <input type="checkbox"/> 7740 ^s	<input type="checkbox"/> 200.7 <input type="checkbox"/> 270.2	<input type="checkbox"/> 3113B		<input type="checkbox"/> 99
Silicon	<input type="checkbox"/> 6010B ⁱ	<input type="checkbox"/> 200.7		<input type="checkbox"/> 1620	<input type="checkbox"/> 99
Silica	<input type="checkbox"/> 6010B	<input type="checkbox"/> 200.7		<input type="checkbox"/> 1620	<input type="checkbox"/> 99
Silver	<input checked="" type="checkbox"/> 6010B <input type="checkbox"/> 7761 ^s	<input type="checkbox"/> 200.7 <input type="checkbox"/> 272.2			<input type="checkbox"/> 99
Sodium	<input checked="" type="checkbox"/> 6010B <input type="checkbox"/> 7770 ⁱ	<input type="checkbox"/> 200.7 <input type="checkbox"/> 273.1 ⁱ			<input type="checkbox"/> 99
Strontium	<input checked="" type="checkbox"/> 6010B	<input type="checkbox"/> 200.7			<input type="checkbox"/> 99
Thallium	<input checked="" type="checkbox"/> 6010B <input type="checkbox"/> 7841 ^s	<input type="checkbox"/> 200.7 <input type="checkbox"/> 279.2 <input type="checkbox"/> 200.9			<input type="checkbox"/> 99
Tin	<input type="checkbox"/> 6010B	<input type="checkbox"/> 200.7			<input type="checkbox"/> 99
Titanium	<input type="checkbox"/> 6010B	<input type="checkbox"/> 200.7			<input type="checkbox"/> 99
Uranium	<input type="checkbox"/> 6010B ⁱ	<input type="checkbox"/> 200.7 ⁱ		<input type="checkbox"/> 1620	<input type="checkbox"/> 99
Vanadium	<input checked="" type="checkbox"/> 6010B	<input type="checkbox"/> 200.7			<input type="checkbox"/> 99
Zinc	<input checked="" type="checkbox"/> 6010B	<input type="checkbox"/> 200.7			<input type="checkbox"/> 99
Zirconium	<input type="checkbox"/> 6010B ⁱ	<input type="checkbox"/> 200.7 ⁱ		<input type="checkbox"/> 1620	<input type="checkbox"/> 99

Other: _____

Method: _____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- * = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

- MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LCS = Laboratory Control Sample.
NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).
4. Flame AA.
5. Graphite Furnace AA.

RFW 21-21L-033/N-10/96

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/26/01

CLIENT: TNU-HANFORD B01-063

LVL LOT #: 0104L576

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
-004	B11TW1	Silver, Total	0.1 u	MG/KG	0.1	1.0
		Aluminum, Total	1.3 u	MG/KG	1.3	1.0
		Arsenic, Total	0.23 u	MG/KG	0.23	1.0
		Barium, Total	0.06	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Calcium, Total	10.7	MG/KG	0.80	1.0
		Cadmium, Total	0.16	MG/KG	0.03	1.0
		Cobalt, Total	0.08 u	MG/KG	0.08	1.0
		Chromium, Total	0.09 u	MG/KG	0.09	1.0
		Copper, Total	0.35	MG/KG	0.07	1.0
		Iron, Total	3.1	MG/KG	1.6	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	3.5 u	MG/KG	3.5	1.0
		Magnesium, Total	2.4	MG/KG	0.87	1.0
		Manganese, Total	0.20	MG/KG	0.01	1.0
		Sodium, Total	18.2	MG/KG	0.17	1.0
		Nickel, Total	0.48	MG/KG	0.12	1.0
		Lead, Total	4.2	MG/KG	0.26	1.0
		Antimony, Total	0.19 u	MG/KG	0.19	1.0
		Selenium, Total	0.26 u	MG/KG	0.26	1.0
		Thallium, Total	0.39 u	MG/KG	0.39	1.0
		Vanadium, Total	0.07 u	MG/KG	0.07	1.0
		Zinc, Total	333	MG/KG	0.03	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/26/01

CLIENT: TNU-HANFORD B01-063

LVL LOT #: 0104L576

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
BLANK1	01L0217-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	1.3 u	MG/KG	1.3	1.0
		Arsenic, Total	0.23 u	MG/KG	0.23	1.0
		Barium, Total	0.02	MG/KG	0.02	1.0
		Beryllium, Total	0.02 u	MG/KG	0.02	1.0
		Calcium, Total	0.81 u	MG/KG	0.81	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Cobalt, Total	0.08 u	MG/KG	0.08	1.0
		Chromium, Total	0.17	MG/KG	0.09	1.0
		Copper, Total	0.07 u	MG/KG	0.07	1.0
		Iron, Total	1.6 u	MG/KG	1.6	1.0
		Potassium, Total	3.5 u	MG/KG	3.5	1.0
		Magnesium, Total	0.88 u	MG/KG	0.88	1.0
		Manganese, Total	0.03	MG/KG	0.01	1.0
		Sodium, Total	1.7	MG/KG	0.17	1.0
		Nickel, Total	0.12 u	MG/KG	0.12	1.0
		Lead, Total	0.26 u	MG/KG	0.26	1.0
		Antimony, Total	0.19 u	MG/KG	0.19	1.0
		Selenium, Total	0.26 u	MG/KG	0.26	1.0
		Thallium, Total	0.39 u	MG/KG	0.39	1.0
		Vanadium, Total	0.07 u	MG/KG	0.07	1.0
		Zinc, Total	0.03 u	MG/KG	0.03	1.0
BLANK1	01C0115-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 04/26/01

CLIENT: TNU-HANFORD B01-063

LVL LOT #: 0104L576

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-----	-----	-----	-----	-----	-----	-----	-----
-004	B11TW1	Silver, Total	4.8	0.1 u	4.9	98.0	1.0
		Aluminum, Total	189	1.3 u	198	95.4	1.0
		Arsenic, Total	182	0.23u	198	92.0	1.0
		Barium, Total	188	0.06	198	95.2	1.0
		Beryllium, Total	4.8	0.02u	4.9	98.0	1.0
		Calcium, Total	2490	10.7	2480	100.2	1.0
		Cadmium, Total	4.9	0.16	4.9	96.7	1.0
		Cobalt, Total	48.4	0.08u	49.5	97.8	1.0
		Chromium, Total	19.6	0.09u	19.8	99.0	1.0
		Copper, Total	24.0	0.35	24.8	95.3	1.0
		Iron, Total	99.0	3.1	99.0	96.9	1.0
		Mercury, Total	0.18	0.02u	0.17	107.8	1.0
		Potassium, Total	2380	3.5 u	2480	96.1	1.0
		Magnesium, Total	2410	2.4	2480	97.1	1.0
		Manganese, Total	50.2	0.20	49.5	101.0	1.0
		Sodium, Total	2350	18.2	2480	94.4	1.0
		Nickel, Total	47.9	0.48	49.5	95.8	1.0
		Lead, Total	51.0	4.2	49.5	94.5	1.0
		Antimony, Total	47.8	0.19u	49.5	96.6	1.0
		Selenium, Total	175	0.26u	198	88.5	1.0
		Thallium, Total	185	0.39u	198	93.4	1.0
		Vanadium, Total	49.3	0.07u	49.5	99.6	1.0
		Zinc, Total	378	333	49.5	90.9*	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 04/26/01

CLIENT: TNU-HANFORD B01-063

LVL LOT #: 0104L576

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE RPD		DILUTION FACTOR (REP)
-----	-----	-----	-----	-----	-----	-----
-004REP	B11TW1	Silver, Total	0.1 u	0.1 u	NC	1.0
		Aluminum, Total	1.3 u	1.3 u	NC	1.0
		Arsenic, Total	0.23u	0.23u	NC	1.0
		Barium, Total	0.06	0.05	17.2	1.0
		Beryllium, Total	0.02u	0.02u	NC	1.0
		Calcium, Total	10.7	8.9	18.4	1.0
		Cadmium, Total	0.16	0.15	5.1	1.0
		Cobalt, Total	0.08u	0.08u	NC	1.0
		Chromium, Total	0.09u	0.09u	NC	1.0
		Copper, Total	0.35	0.34	4.9	1.0
		Iron, Total	3.1	2.8	10.2	1.0
		Mercury, Total	0.02u	0.02	NC 200	1.0
		Potassium, Total	3.5 u	3.5 u	NC	1.0
		Magnesium, Total	2.4	3.2	28.6	1.0
		Manganese, Total	0.20	0.19	0.51	1.0
		Sodium, Total	18.2	10.5	53.7	1.0
		Nickel, Total	0.48	0.52	8.3	1.0
		Lead, Total	4.2	4.2	0.00	1.0
		Antimony, Total	0.19u	0.19u	NC	1.0
		Selenium, Total	0.26u	0.26u	NC	1.0
		Thallium, Total	0.39u	0.39u	NC	1.0
		Vanadium, Total	0.07u	0.07u	NC	1.0
		Zinc, Total	333	334	0.15	1.0

7/3/01

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 04/26/01

CLIENT: TNU-HANFORD B01-063

LVL LOT #: 0104L576

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
-----	-----	-----	-----	-----	-----	-----
LCS1	01L0217-LC1	Silver, LCS	48.6	50.0	MG/KG	97.2
		Aluminum, LCS	494	500	MG/KG	98.8
		Arsenic, LCS	924	1000	MG/KG	92.4
		Barium, LCS	485	500	MG/KG	97.0
		Beryllium, LCS	24.0	25.0	MG/KG	96.0
		Calcium, LCS	2410	2500	MG/KG	96.5
		Cadmium, LCS	24.0	25.0	MG/KG	96.0
		Cobalt, LCS	244	250	MG/KG	97.8
		Chromium, LCS	49.2	50.0	MG/KG	98.4
		Copper, LCS	123	125	MG/KG	98.5
		Iron, LCS	490	500	MG/KG	98.0
		Potassium, LCS	2470	2500	MG/KG	98.8
		Magnesium, LCS	2460	2500	MG/KG	98.3
		Manganese, LCS	76.2	75.0	MG/KG	101.6
		Sodium, LCS	2420	2500	MG/KG	96.8
		Nickel, LCS	193	200	MG/KG	96.7
		Lead, LCS	239	250	MG/KG	95.7
		Antimony, LCS	296	300	MG/KG	98.5
		Selenium, LCS	889	1000	MG/KG	88.9
		Thallium, LCS	953	1000	MG/KG	95.3
		Vanadium, LCS	253	250	MG/KG	101.1
		Zinc, LCS	95.4	100	MG/KG	95.4
LCS1	01C0115-LC1	Mercury, LCS	3.0	2.5	MG/KG	119.7



0104L576

ALL FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TRU-Hanford Bol-063</u>				Refrigerator # <u>31</u> <u>3</u> <u>3</u> <u>3</u> <u>3</u> <u>3</u>	
Est. Final Proj. Sampling Date _____				#/Type Container	
Project # <u>11343-6666-001-9999-00</u>				Liquid <u>1AG</u> <u>1AG</u> <u>1AG</u> <u>1AG</u> <u>1P</u>	
Project Contact/Phone # _____				Solid _____	
Lionville Laboratory Project Manager <u>OL</u>				Volume	
QC <u>Spec</u> Del <u>Std</u> TAT <u>7 day</u>				Liquid <u>40</u> <u>1L</u> <u>1L</u> <u>120</u> <u>500</u>	
Date Rec'd <u>4-2001</u> Date Due <u>4-27-01</u>				Solid _____	
ANALYSES REQUESTED →				Preservatives _____	
				ORGANIC	
				VOA BNA Pest/PCB Herb	
				INORG	
				Metal <u>N</u>	
				Lionville Laboratory Use Only	
				H2O H2O2 OPCD IPT MTD	
MATRIX CODES:					
S - Soil					
SE - Sediment					
SO - Solid					
SL - Sludge					
W - Water					
O - Oil					
A - Air					
DS - Drum					
DL - Drum					
L - EP/TCLP					
Leachate					
WI - Wipe					
X - Other					
F - Fish					
Lab ID				Client ID/Description	
Matrix OC Chosen (S)				Matrix Date Collected Time Collected	
MS MSD					
001 B11TY8				0 4-2001 0807	
002 1 V9				1 1 0825	
003 1 W0				1 1 0910	
004 1 W1				1 1 1220	

Special Instructions:

Saf Bol-063

DATE/REVISIONS:

Mtd 1. Al, Ag, Ba, Br, Ca, Cd, Co, Cr, Cu, Fe, K,

2. Mg, Mn, Na, Ni, Sb, V, Zn, As, Pb,

3. Se, Ti, Hg

Run Matrix QC

Relinquished by	Received by	Date	Time
FDEx	Thoppel	4/20/01	0920

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL		
	REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or (N)

NOTES:

4235 7954 3808

Lionville Laboratory Use Only

Samples were:

1) Shipped ☒ or

Hand Delivered

Airbill #

4235 1954 3808

2) Ambient or ☒ Chilled3) Received in Good Condition ☒ or N4) Samples Properly Preserved ☒ or N5) Received Within Holding Times ☒ or N

Tamper Resistant Seal was

1) Present on Outer Package ☒ or N2) Unbroken on Outer Package ☒ or N3) Present on Sample ☒ or N4) Unbroken on Sample ☒ or NCOC Rec'd Present Upon Sample Rec'd ☒ or NCooler Temp ☒ or N

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B01-063-4		Page <u>1</u> of <u>1</u>	
Collector THOMAS GS		Company Contact LERCH JA		Telephone No. 509-373-5904		Project Coordinator TRENT, SJ		Price Code 3D Data Turnaround	
Project Designation 600-23 Anomalous Waste Characterization - Other Liquid		Sampling Location 600-23 DIG SITE		SAF No. B01-063		Air Quality <input type="checkbox"/>		7 days	
Ice Chest No. BH1-94 20f2)		Field Logbook No. EL-1518		COA R600232E00		Method of Shipment FED EX			
Shipped To TMA/RECRA		Offsite Property No. A010250		Bill of Lading/Air Bill No. 42357954-3808					
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation		A Cool 4C	C None	B Cool 4C	
				Type of Container		Gs*	AG	AG	
				No. of Container(s)		1	1	1	
				Volume		40mL	120mL	1000mL	
Special Handling and/or Storage				VOA - 8260A (TCL)		pH (Soil) - 9045		Semi-VOA - 8270A (TCL)	
SAMPLE ANALYSIS									
				<i>Tied to</i>					
Sample No.	Matrix *	Sample Date	Sample Time						
B11TV8	OTHER LIQUID	4/16/01	0807	X	X	X			B11TV0
B11TV9	OTHER LIQUID	4/16/01	0825	X	X	X			B11TV1
B11TW0	OTHER LIQUID	4/16/01	0910	X	X	X			B11TV2
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By <i>Greg Thomas</i>		Date/Time <i>4/16/01 1530</i>		Received By <i>Steve in Ref 2B</i>		Date/Time <i>4/16/01 1530</i>		<p>Samples stored in Ref. # <u>2B</u> at the 3728 Shipping Facility on <u>4/16/01</u>. Collector not available to relinquish samples on <u>4/16/01</u> for shipment.</p> <p style="text-align: right;"><i>R.T.</i> <i>4/19/01</i></p>	
Relinquished By <i>R. L. R. Thoren</i>		Date/Time <i>4/19/01 0900</i>		Received By <i>R. L. R. Thoren</i>		Date/Time <i>4/19/01 0900</i>			
Relinquished By <i>R. L. R. Thoren</i>		Date/Time <i>4/19/01 0930</i>		Received By <i>FEDEX</i>		Date/Time <i>4/19/01 0920</i>			
Relinquished By <i>FEDEX</i>		Date/Time <i>4/20/01 0920</i>		Received By <i>Thoren</i>		Date/Time <i>4/20/01 0920</i>			
Relinquished By		Date/Time		Received By		Date/Time			
Relinquished By		Date/Time		Received By		Date/Time			
LABORATORY SECTION		Received By		Title				Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time	

Collection Agency JMAS GS		Company Contact LERCH JA		509-373-5904		TRENT, NJ	
Project Designation 600-23 Anomalous Waste Characterization - Other Liquid				Sampling Location 600-23 DIG SITE		SAF No. B01-063	
Air Quality <input type="checkbox"/> 7 days							
Ice Chest No. BH1-94 (2 of 2)		Field Logbook No. EL-1518		COA R600232E00		Method of Shipment FED EX	
Shipped To TMA/RECRA		Offsite Property No. A010250		Bill of Lading/Air Bill No. 42357954			
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation		C None E None D Cool 4C	
				Type of Container		P aG	
				No. of Container(s)		1 1 1	
				Volume		120mL 300mL 1000mL	
Special Handling and/or Storage				pH (Soil) - 9045		See item (1) in Special Instructions	
SAMPLE ANALYSIS				PCBs - 8082			
Sample No.		Matrix *		Sample Date		Sample Time	
B11TW1		OTHER LIQUID		4/16/01		1220	
B11TW2		OTHER LIQUID		RT 4/19/01			
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS			
Relinquished By Chris Thomas 4/16/01 1530		Received By Ref 2B 4/16/01 1530		(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Thallium); Mercury - 7470 - (CV)			
Relinquished By Ref 2B 3728 4/19/01 0930		Received By R. Thorne 4/19/01 0930		Samples stored in Ref. # 2B at the 3728 Shipping Facility on 4/16/01.			
Relinquished By R. Thorne 4/19/01 0930		Received By F. O. 4/19/01 0930		Collector not available to relinquish samples on 4/19/01 for shipment..			
Relinquished By FedEx 4/20/01 0930		Received By Thorne 4/20/01 0930		RT 4/19/01 4/16/01			
Relinquished By		Received By					
Relinquished By		Received By					
LABORATORY SECTION		Received By		Title		Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time	

BH1-EE-011 (10/99)

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-063 H1323

DATE RECEIVED: 04/20/01

LVL LOT # :0104L576

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B11TW1	004	OI	01LE0468	04/16/01	04/23/01	04/25/01
B11TW1	004 MS	OI	01LE0468	04/16/01	04/23/01	04/25/01
B11TW1	004 MSD	OI	01LE0468	04/16/01	04/23/01	04/25/01

LAB QC:

PBLKXJ	MB1	OI	01LE0468	N/A	04/23/01	04/24/01
PBLKXJ	MB1 BS	OI	01LE0468	N/A	04/23/01	04/24/01





Analytical Report

Client: TNU HANFORD B01-063
LVL#: 0104L576
SDG/SAF#: H1296/B01-063

W.O.#: 11343-606-001-9999-00
Date Received: 04-20-01

PCB

One (1) oil sample was collected on 04-16-01.

The sample and its associated QC samples were extracted on 04-23-01 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 04-24,25-01. The extraction procedure was based on method 3580A (Waste dilution, 1 g into 10 mLs hexane) and the extracts were analyzed based on method 8082 for Aroclors only.


The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. The cooler temperature has been recorded on the chain-of-custody.
2. All required holding times for extraction and analysis have been met.
3. The sample and its associated QC samples received a sulfuric acid cleanup.
4. The method blank was below the reporting limits for all target compounds.
5. All surrogate recoveries were within acceptance criteria.
6. The blank spike recovery was within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. As of January 27, 2001, Recra Labnet Philadelphia became Lionville Laboratory Incorporated. Some forms may still reference Recra Labnet Philadelphia.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 10 pages.



11. ~~LIONVILLE LABORATORY INC. 2 and 1254 were identified in these samples. The reported Aroclor was~~
chosen based on the best pattern match and fit. Quantitation was performed using congeners
common to both Aroclors to give the best overall total PCB concentration.
12. I certify that this sample data package is in compliance with SOW requirements, both technically
and for completeness, other than the conditions detailed above. Release of the data contained in
this hard-copy data package has been authorized by the laboratory Manager or a designee, as
verified by the following signature.


Iain Daniels
Deputy Laboratory Manager
Lionville Laboratory Incorporated


Date

pefr:\group\data\pest\04L-576.pcb



GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

- U** = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J** = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.

ABBREVIATIONS

- BS** = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD** = Indicates blank spike duplicate.
- MS** = Indicates matrix spike.
- MSD** = Indicates matrix spike duplicate.
- DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA** = Not Applicable.
- DF** = Dilution Factor.
- NR** = Not Required.
- SP** = Indicates Spiked Compound.



GLOSSARY OF PESTICIDE/PCB DATA

- P** = This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C** = This flag applies to a compound that has been confirmed by GC/MS.

PCBs by GC

Report Date: 05/01/01 07:15

Client: **TNU-HANFORD B01-063**

Work Order: 11343606001 Page: 1

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U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Age 51.6.



0104LS76

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TNU-Hanford B01-063</u>				Refrigerator # <u>31</u>		A <u>3</u>		B <u>3</u>		D <u>3</u>		C <u>3</u>		E <u>3</u>		F <u>3</u>	
Est. Final Proj. Sampling Date _____				#/Type Container		Liquid <u>18G</u>		18G		18G		18G		1P			
Project # <u>11343-6060-001-9999-00</u>				Volume		Liquid <u>40</u>		1L		1L		120		500			
Project Contact/Phone # _____				Preservatives		-		-		-		-		-			
Lionville Laboratory Project Manager <u>OS</u>				ANALYSES REQUESTED		ORGANIC						INORG					
QC <u>Spec</u> Del <u>Std</u> TAT <u>7 day</u>				Date Rec'd <u>4-20-01</u> Date Due <u>4-27-01</u>		VOA		BNA		Pest/PCB		Herb		Metal		Zn	
MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish				Lab ID		Client ID/Description		Matrix QC Chosen (✓) MS MSD		Matrix		Date Collected		Time Collected		Lionville Laboratory Use Only	
				001		BUTY8		W		4-18-01		0807				I	
				002		V9		I		I		0825				I	
				003		W0		I		I		0910				I	
				004		W1		I		I		1220				I	

Special Instructions: Saf B01-063Run Matrix QC

DATE/REVISIONS:

MtG 1. Al, Ag, Ba, Br, Ca, Cd, Co, Cr, Cu, Fe, K,
I 2. Mg, Mn, Na, Ni, Sb, V, Zn, As, Pb,
4-27-01 3. Se, Ti, Hg
 4. Matrix changed to water per PM
 5. _____
 6. _____

Lionville Laboratory Use Only

Samples were:
 1) Shipped ☒ or
 Hand Delivered ☐
 Airbill # 423519543808

2) Ambient or Chilled ☒
 3) Received in Good Condition ☒ or N
 4) Samples Properly Preserved ☒ or N

5) Received Within Holding Times ☒ or N

Tamper Resistant Seal was:
 1) Present on Outer Package (Y) or N
 2) Unbroken on Outer Package (Y) or N
 3) Present on Sample (Y) or N

4) Unbroken on Sample (Y) or N
 COC Record Present Upon Sample Rec't (Y) or N
 Cooler Temp 6.1 C

Relinquished by	Received by	Date	Time
<u>FEDEX</u>	<u>Thoppel</u>	<u>4/20/01</u>	<u>0920</u>

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL		

Discrepancies Between Samples Labels and COC Record? Y or N ☒
 NOTES:

4235 7954 3808

REWRITTEN

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B01-063-4		Page 1 of 1					
Collector THOMAS GS		Company Contact LERCH JA		Telephone No. 509-373-5904		Project Coordinator TRENT, SJ		Price Code 3D Data Turnaround					
Project Designation 600-23 Anomalous Waste Characterization - Other Liquid		Sampling Location 600-23 DIG SITE		SAF No. B01-063		Air Quality <input type="checkbox"/>		7 days					
Ice Chest No. BH1-94 20f2)		Field Logbook No. EL-1518		COA R600232E00		Method of Shipment FED EX							
Shipped To TMA RECRA		Offsite Property No. A010250		Bill of Lading/Air Bill No. 42357954-3808									
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation		A Cool 4C		C None		B Cool 4C			
				Type of Container		Gs*		AG		AG			
				No. of Container(s)		1		1		1			
				Volume		40mL		120mL		1000mL			
Special Handling and/or Storage				VOA - B260A (TCL)		pH (Soil) - 9045		Semi-VOA - B270A (TCL)					
SAMPLE ANALYSIS													
Sample No.		Matrix *		Sample Date		Sample Time		Tied to					
B11TV8		OTHER LIQUID		4/16/01		0807		X		B11TV0			
B11TV9		OTHER LIQUID		4/16/01		0825		X		B11TV1			
B11TW0		OTHER LIQUID		4/16/01		0910		X		B11TV2			
CHAIN OF POSSESSION													
Relinquished By				Sign/Print Names				SPECIAL INSTRUCTIONS					
Greg Thomas 4/16/01 1530				Greg Thomas 4/16/01 1530				<p>Samples stored in Ref. # 2B at the 3728 Shipping Facility on 4/16/01.</p> <p>Collector not available to relinquish samples on 4/14/01 for shipment.</p> <p>RT 4/19/01</p>					
Relinquished By				Received By									
R. L. R. 4/19/01 0900				R. L. R. 4/19/01 0900									
Relinquished By				Received By									
FED EX 4-20-01 0920				TK 4-20-01 0920									
Relinquished By				Received By				Matrix *					
Date/Time				Date/Time				S. Soil					
Date/Time				Date/Time				M. Sediment					
Date/Time				Date/Time				S. Solid					
Date/Time				Date/Time				S. Sludge					
Date/Time				Date/Time				W. Water					
Date/Time				Date/Time				D. Oil					
Date/Time				Date/Time				A. Air					
Date/Time				Date/Time				D. Drums Solids					
Date/Time				Date/Time				D. Drums Liquids					
Date/Time				Date/Time				F. Fumes					
Date/Time				Date/Time				W. Wipe					
Date/Time				Date/Time				F. Liquid					
Date/Time				Date/Time				V. Vegetation					
Date/Time				Date/Time				S. Other					
LABORATORY SECTION		Received By		Title		Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time							

Dechert Han		Company Contact LERCH JA		Telephone No. 509-373-5904		TRENT, SJ		Price Code 00	
Collecting Agency UMAS GS		Project Designation 600-23 Anomalous Waste Characterization - Other Liquid		Sampling Location 600-23 DIG SITE		SAF No. B01-063		Air Quality <input type="checkbox"/> 7 days	
Ice Chest No. BH1-94 (2 of 2)		Field Logbook No. EL-1518		COA R600232E00		Method of Shipment FED EX		6	
Shipped To TMA/RECRA		Offsite Property No. A010250		Bill of Lading/Air Bill No. 42357954					
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation		None		Cool 4C	
				Type of Container		P		aG	
				No. of Container(s)		1		1	
				Volume		120mL		1000mL	
Special Handling and/or Storage				pH (Soil) - 9045		See item (1) in Special Instructions		PCBs - 8082	
SAMPLE ANALYSIS									
Sample No.		Matrix *		Sample Date		Sample Time		Tried To	
B11TW1		OTHER LIQUID		4/16/01		1220		B11TW3	
B11TW2		OTHER LIQUID		RT 4/19/01					
CHAIN OF POSSESSION									
Relinquished By		Date/Time		Sign/Print Name		Date/Time		SPECIAL INSTRUCTIONS	
Greg Thomas		4/16/01		Ref 2B		4/16/01		(1) ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Thallium); Mercury - 7470 - (CV)	
Ref 2B		4/19/01		R. Thomas		4/19/01		Samples stored in Ref. # 2B at the 3728 Shipping Facility on 4/16/01. Collector not available to relinquish samples on 4/19/01 for shipment.	
R. Thomas		4/19/01		F. O. J.		4/19/01		RT 4/19/01	
F. O. J.		4/19/01		Thippa		4/20/01		4/19/01	
Thippa		4/20/01							
Relinquished By		Date/Time		Received By		Date/Time		Matrix *	
S. Soil				SI Sediment				S Solid	
SI Solid				S Sludge				W - Water	
U TM				A Air				DS Drum Solids	
DS Drum Solids				TH - Drum Liquid				T Tissue	
WT Waste				L Liquid				V Vegetation	
L Liquid				N Other					
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

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Chain of Custody # B01-063-4,5

- Telephoned to: _____ On _____ By _____

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-063 H1323

DATE RECEIVED: 04/20/01

LVL LOT # :0104L576

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B11TV8	001	W	01LE0472	04/16/01	04/23/01	04/30/01
B11TV9	002	W	01LE0472	04/16/01	04/23/01	04/27/01
B11TW0	003	W	01LE0472	04/16/01	04/23/01	04/30/01

LAB QC:

SBLKVL	MB1	W	01LE0472	N/A	04/23/01	04/27/01
SBLKVL	MB1 BS	W	01LE0472	N/A	04/23/01	04/27/01
SBLKVL	MB1 BSD	W	01LE0472	N/A	04/23/01	04/27/01





Client: TNU-HANFORD B01-063
RFW #: 0104L576
SDG/SAF #: H1323/B01-063

W.O. #: 11343-606-001-9999-00
Date Received: 04-20-2001

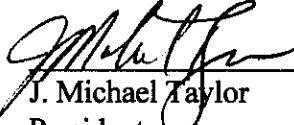
SEMIVOLATILE

Three (3) water samples were collected on 04-16-2001.

The samples and their associated QC samples were extracted on 04-23-2001 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 04-27,30-2001.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. The cooler temperature upon receipt has been recorded on the chain-of-custody.
2. The samples were extracted and analyzed within required holding times.
3. Non-target compounds were detected in the samples.
4. All samples required 800 to 50,000-fold dilution due to high levels of non-target compounds. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
5. All surrogate recoveries were within EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. Internal standard area criteria were not met for sample B11TV9. The GC/MS instrument was inspected for possible malfunction and was judged to be functioning properly and all surrogate recoveries were within QC limits; consequently, the sample was not reanalyzed.
8. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."
9. As of January 27, 2001, Recra LabNet Philadelphia became Lionville Laboratory Incorporated. Some Forms may still reference Recra LabNet Philadelphia.


J. Michael Taylor
President
Lionville Laboratory Incorporated

5/24/01
Date

son\group\data\bna\tnu-hanford-0104-576.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 14 pages.

Lionville Laboratory Sample Discrepancy Report (SDR) SDR #:

015X095

Initiator: M. McEOWANE Batch: 0104L576 Parameter: 0625
 Date: 4/25/01 Samples: 1, 2, 3 Matrix: W
 Client: TNU Method: SW846/MCAWW/CLP/ Prep Batch: 01LE

1. Reason for SDR

a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C
☐ Transcription Error ☐ Wrong Test Code ☐ Other _____

b. General Discrepancy

☐ Missing Sample/Extract* ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

500 mL F.V. #2
 60 mL F.V. #1
 40 mL F.V. 3

2. Known or Probable Cause(s)

sample matrix.

3. Discussion and Proposed Action

Other Description:

☐ Re-log
☐ Entire Batch
☐ Following Samples: _____
☐ Re-leach
☐ Re-extract
☐ Re-digest
☐ Revise EDD
☐ Change Test Code to _____
☐ Place On/Take Off Hold (circle)

4. Project Manager Instructions...signature/date:

☐ Concur with Proposed Action
☐ Disagree with Proposed Action; See Instruction
☒ Include in Case Narrative
☐ Client Contacted:
 Date/Person _____
☐ Add
☐ Cancel

5. Final Action...signature/date:

Other Explanation:

☐ Verified re-[log][leach][extract][digest][analysis] (circle)
☒ Included in Case Narrative
☐ Hard Copy COC Revised
☐ Electronic COC Revised
☐ EDD Corrections Completed

Samples required additional dilutions prior to analysis. Final dilutions 800 fold to 50,000 fold noted in narrative.

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route Distribution of Completed SDR

☒ X Initiator
☒ X Lab General Manager: M. Taylor
☒ X Project Mgr. Stone/Johnson/Haslett
☒ X Technical Mgr. Wesson/Daniels
☒ X QA (file): Alberts
☐ Data Management: Feldman
☐ Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR

☐ Metals: Beegle
☐ Inorganic: Perrone
☐ GC/LC: Kiger
☐ MS: Rychlak/Layman
☐ Log-in: Keppel
☐ Admin: Soos
☐ Other: _____

GLOSSARY OF BNA DATA

DATA QUALIFIERS

- U** = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J** = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B** = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D** = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I** = Interference.
- NQ** = Result qualitatively confirmed but not able to quantify.
- A** = Indicates that a TIC is a suspected aldol-condensation product.
- N** = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X** = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y** = Additional qualifiers used as required are explained in the case narrative.



GLOSSARY OF BNA DATA

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.



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Report Date: 05/08/01 12:05

Page: 1a

*= Outside of EPA CLP QC limits.

Cust ID:

B11TV8

B11TV9

B11TWO

SBLKVL

SBLKVL BS

SBLKVL BSD

RFW#:

001

002

003

01LE0472-MB1

01LE0472-MB1

01LE0472-MB1

2-Chloronaphthalene	12000	U	510000	U	8200	U	10	U	10	U	10	U
2-Nitroaniline	31000	U	1300000	U	20000	U	25	U	25	U	25	U
Dimethylphthalate	12000	U	510000	U	8200	U	10	U	10	U	10	U
Acenaphthylene	12000	U	510000	U	8200	U	10	U	10	U	10	U
2,6-Dinitrotoluene	12000	U	510000	U	8200	U	10	U	10	U	10	U
3-Nitroaniline	31000	U	1300000	U	20000	U	25	U	25	U	25	U
Acenaphthene	12000	U	510000	U	8200	U	10	U	56	%	62	%
2,4-Dinitrophenol	31000	U	1300000	U	20000	U	25	U	25	U	25	U
4-Nitrophenol	31000	U	1300000	U	20000	U	25	U	48	%	69	%
Dibenzofuran	12000	U	510000	U	8200	U	10	U	10	U	10	U
2,4-Dinitrotoluene	12000	U	510000	U	8200	U	10	U	60	%	78	%
Diethylphthalate	12000	U	510000	U	8200	U	10	U	10	U	10	U
4-Chlorophenyl-phenylether	12000	U	510000	U	8200	U	10	U	10	U	10	U
Fluorene	12000	U	510000	U	8200	U	10	U	10	U	10	U
4-Nitroaniline	31000	U	1300000	U	20000	U	25	U	25	U	25	U
4,6-Dinitro-2-methylphenol	31000	U	1300000	U	20000	U	25	U	25	U	25	U
N-Nitrosodiphenylamine (1)	12000	U	510000	U	8200	U	10	U	10	U	10	U
4-Bromophenyl-phenylether	12000	U	510000	U	8200	U	10	U	10	U	10	U
Hexachlorobenzene	12000	U	510000	U	8200	U	10	U	10	U	10	U
Pentachlorophenol	31000	U	1300000	U	20000	U	25	U	37	%	67	%
Phenanthrene	12000	U	510000	U	8200	U	10	U	10	U	10	U
Anthracene	12000	U	510000	U	8200	U	10	U	10	U	10	U
Carbazole	12000	U	510000	U	8200	U	10	U	10	U	10	U
Di-n-butylphthalate	12000	U	510000	U	8200	U	1	J	10	U	0.8	JB
Fluoranthene	12000	U	510000	U	8200	U	10	U	10	U	10	U
Pyrene	12000	U	510000	U	8200	U	10	U	80	%	83	%
Butylbenzylphthalate	12000	U	510000	U	8200	U	10	U	10	U	10	U
3,3'-Dichlorobenzidine	12000	U	510000	U	8200	U	10	U	10	U	10	U
Benzo(a)anthracene	12000	U	510000	U	8200	U	10	U	10	U	10	U
Chrysene	12000	U	510000	U	8200	U	10	U	10	U	10	U
bis(2-Ethylhexyl)phthalate	12000	U	510000	U	8200	U	1	J	0.7	JB	0.7	JB
Di-n-octyl phthalate	12000	U	510000	U	8200	U	10	U	10	U	10	U
Benzo(b)fluoranthene	12000	U	510000	U	8200	U	10	U	10	U	10	U
Benzo(k)fluoranthene	12000	U	510000	U	8200	U	10	U	10	U	10	U
Benzo(a)pyrene	12000	U	510000	U	8200	U	10	U	10	U	10	U
Indeno(1,2,3-cd)pyrene	12000	U	510000	U	8200	U	10	U	10	U	10	U
Dibenz(a,h)anthracene	12000	U	510000	U	8200	U	10	U	10	U	10	U
Benzo(g,h,i)perylene	12000	U	510000	U	8200	U	10	U	10	U	10	U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B11TV8

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B01-063 H1323

Matrix: (soil/water) WATER

Lab Sample ID: 0104L576-001

Sample wt/vol: 980 (g/mL) ML

Lab File ID: A043017

Level: (low/med) LOW

Date Received: 04/20/01

% Moisture: decanted: (Y/N)

Date Extracted: 04/23/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/30/01

Injection Volume: 2.0(uL)

Dilution Factor: 1200

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 11

(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	22.34	4000	J
2.	ALKANE	22.79	4000	J
3.	ALKANE	23.31	6000	J
4.	ALKANE	23.89	8000	J
5.	ALKANE	24.58	8000	J
6.	ALKANE	25.39	10000	J
7.	ALKANE	26.35	10000	J
8.	ALKANE	27.51	10000	J
9.	ALKANE	28.89	10000	J
10.	ALKANE	30.56	10000	J
11.	ALKANE	32.57	10000	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B11TV9

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B01-063 H1323

Matrix: (soil/water) WATER

Lab Sample ID: 0104L576-002

Sample wt/vol: 980 (g/mL) ML

Lab File ID: A042718

Level: (low/med) LOW

Date Received: 04/20/01

% Moisture: decanted: (Y/N)

Date Extracted: 04/23/01

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 04/27/01

Injection Volume: 2.0 (uL)

Dilution Factor: 50000

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 14

(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	21.42	100000	J
2.	ALKANE	21.90	200000	J
3.	ALKANE	22.34	300000	J
4.	ALKANE	22.80	200000	J
5.	UNKNOWN	23.00	100000	J
6.	ALKANE	23.31	300000	J
7.	UNKNOWN	23.54	100000	J
8.	ALKANE	23.90	300000	J
9.	ALKANE	24.58	300000	J
10.	ALKANE	25.40	300000	J
11.	ALKANE	26.37	300000	J
12.	ALKANE	27.52	200000	J
13.	ALKANE	28.90	300000	J
14.	ALKANE	32.58	200000	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B11TW0

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B01-063 H1323

Matrix: (soil/water) WATER

Lab Sample ID: 0104L576-003

Sample wt/vol: 980 (g/mL) ML

Lab File ID: A043018

Level: (low/med) LOW

Date Received: 04/20/01

% Moisture: decanted: (Y/N)

Date Extracted: 04/23/01

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 04/30/01

Injection Volume: 2.0 (uL)

Dilution Factor: 800

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 3

(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	20.27	3000	J
2.	UNKNOWN	21.82	4000	J
3.	UNKNOWN	23.16	3000	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKVL

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B01-063 H1323

Matrix: (soil/water) WATER

Lab Sample ID: 01LE0472-MB1

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: A042713

Level: (low/med) LOW

Date Received: 04/23/01

% Moisture: decanted: (Y/N)

Date Extracted: 04/23/01

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 04/27/01

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

CONCENTRATION UNITS:

Number TICs found: 0

(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

0104L576

Custody Transfer Record/Lab Work Request Page 1 of 1



ALL FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TDU-Hanford Bol-063

Est. Final Proj. Sampling Date _____

Project # 11343-666-001-9999-00

Project Contact/Phone # _____

Lionville Laboratory Project Manager 01QC Spec Del Std TAT 7 dayDate Rec'd 4-2001 Date Due 42701

Refrigerator #

T₁ 20"

#/Type Container

Liquid

Solid

Volume

Liquid

Solid

Preservatives

ANALYSES
REQUESTED

ORGANIC

VOA

BNA

Pes/
PCB

Herb

INORG

Metal

N

Lionville Laboratory Use Only

MATRIX
CODES:

S - Soil
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum
Solids
DL - Drum
Liquide
L - EP/TCLP
Leachate
WI - Wipe
X - Other
F - Fish

Lab
ID

Client ID/Description

Matrix
QC
Chosen
(M)

MS

MSD

Matrix

Date
CollectedTime
CollectedH
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BSpecial Instructions: Saf Bol-063

DATE/REVISIONS:

Met 1: Al, Ag, Ba, Br, Ca, Cd, Co, Cr, Cu, Fe, K,

2: Mg, Mn, Na, Ni, Sb, V, Zn, As, Pb,

3: Se, Ti, Hg

4: _____

5: _____

6: _____

Run Matrix QC

Lionville Laboratory Use Only

Samples were:

1) Shipped ☒ or
Hand Delivered

Airbill #

123519543818

2) Ambient or Chilled3) Received in Good
Condition ☒ or N4) Samples
Properly Preserved
(Y) or N5) Received Within
Holding Times
(Y) or N

Tamper Resistant Seal was

1) Present on Outer
Package (Y) or N2) Unbroken on Outer
Package (Y) or N3) Present on Sample
(Y) or N4) Unbroken on
Sample (Y) or NCOC Rec'd Present
Upon Sample Rec'd
(Y) or NCooler
Temp (Y) or N

Discrepancies Between
Samples Labels and
COC Record? Y or (N)

NOTES:

4235 7954 3808

Relinquished
byReceived
by

Date

Time

Relinquished
byReceived
by

Date

Time

COMPOSITE
WASTEORIGINAL
REWRITTEN

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B01-063-4		Page 1 of 1					
Collector THOMAS GS		Company Contact LERCH JA		Telephone No. 509-373-5904		Project Coordinator TRENT, SJ		Price Code 3D Data Turnaround					
Project Designation 600-23 Anomalous Waste Characterization - Other Liquid		Sampling Location 600-23 DIG SITE		SAF No. B01-063		Air Quality []		7 days					
Ice Chest No. BH1-94 20f2)		Field Logbook No. EL-1518		COA R600232E00		Method of Shipment FED EX							
Shipped To TMA/RECRA		Offsite Property No. A010250		Bill of Lading/Air Bill No. 42367954-3808									
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation		A Cool 4C		C None		B Cool 4C			
				Type of Container		Gs*		AG		aG			
				No. of Container(s)		1		1		1			
				Volume		40mL		120mL		1000mL			
Special Handling and/or Storage				VOA - 8260A (TCL)		pH (Soil) - 9045		Semi-VOA - 8270A (TCL)					
SAMPLE ANALYSIS													
Sample No.		Matrix *		Sample Date		Sample Time				Tied to			
B11TV8		OTHER LIQUID		4/16/01		0807		X X X		B11TV0			
B11TV9		OTHER LIQUID		4/16/01		0825		X X X		B11TV1			
B11TW0		OTHER LIQUID		4/16/01		0910		X X X		B11TV2			
CHAIN OF POSSESSION						SPECIAL INSTRUCTIONS							
Relinquished By <i>Greg Thomas</i> Date/Time <i>1530</i>			Received By <i>Greg Thomas</i> Date/Time <i>1530</i>			<p>Samples stored in Ref.# 2B at the 3728 Shipping Facility on 4/16/01. Collector not available to relinquish samples on 4/16/01 for shipment.</p> <p style="text-align: right;">RT 4/19/01</p>							
Relinquished By <i>Greg Thomas</i> Date/Time <i>0900</i>			Received By <i>Greg Thomas</i> Date/Time <i>0930</i>										
Relinquished By <i>R. L. R. Thomas</i> Date/Time <i>0930</i>			Received By <i>R. L. R. Thomas</i> Date/Time <i>0930</i>										
Relinquished By <i>R. L. R. Thomas</i> Date/Time <i>0930</i>			Received By <i>R. L. R. Thomas</i> Date/Time <i>0930</i>										
Relinquished By <i>FedEx</i> Date/Time <i>4:20:01 0920</i>			Received By <i>TRK</i> Date/Time <i>4:20:01 0920</i>										
Relinquished By			Received By										
Relinquished By			Received By										
Relinquished By			Received By										
LABORATORY SECTION		Received By		Title		Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time							

BHI-EE-011 (10/99)

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B01-063

DATE RECEIVED: 04/20/01

LVL LOT # :0104L576

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B11TV8	001	W	01LVH140	04/16/01	N/A	04/24/01
B11TV8	001 MS	W	01LVH142	04/16/01	N/A	04/25/01
B11TV8	001 MSD	W	01LVH142	04/16/01	N/A	04/25/01
B11TV9	002	W	01LVH140	04/16/01	N/A	04/24/01
B11TW0	003	W	01LVH140	04/16/01	N/A	04/24/01

LAB QC:

VBLKVM	MB1	W	01LVH140	N/A	N/A	04/24/01
VBLKVN	MB1	W	01LVH142	N/A	N/A	04/25/01
VBLKVN	MB1 BS	W	01LVH142	N/A	N/A	04/25/01





Client: TNU-HANFORD B01-063

RFW #: 0104L576

SDG/SAF #: H1323/B01-063

W.O. #: 11343-606-001-9999-00

Date Received: 04-20-2001

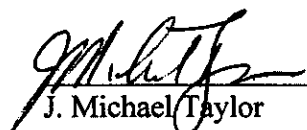
GC/MS VOLATILE

Three (3) water samples were collected on 04-16-2001.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260A for TCL Volatile target compounds on 04-24,25-2001.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. The cooler temperature upon receipt has been recorded on the chain-of-custody.
2. Samples were analyzed within required holding time.
3. Non-target compounds were detected in the method blank.
4. All samples required 100 to 200-fold dilution due to the nature of the sample matrix.
5. One (1) of twenty-four (24) surrogate recoveries was outside EPA QC limits. The analysis of associated matrix spike samples fulfills the reanalysis requirement of sample B11TV8.
6. All matrix spike recoveries were within EPA QC limits.
7. All blank spike recoveries were within EPA QC limits.
8. The method blanks contained the common laboratory contaminant Methylene Chloride at levels less than the CRQL.
9. Internal standard area and retention time criteria were met.
10. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."
11. As of January 27, 2001, Recra LabNet Philadelphia became Lionville Laboratory Incorporated. Some Forms may still reference Recra LabNet Philadelphia.


J. Michael Taylor
President
Lionville Laboratory Incorporated

5/25/01
Date

som\group\data\voa\tnu-hanford-0104-576.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 17 pages.

Initiator: Drychak Batch: 01211576 Parameter: 0221
 Date: 4/25/01 Samples: 1-3 Matrix: water
 Client: THC Method: SW846/MCAWW/CLP/ Prep Batch: —

1. Reason for SDR

a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C
☐ Transcription Error ☐ Wrong Test Code ☐ Other

b. General Discrepancy

☐ Missing Sample/Extract ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date:

c. Problem (Include all relevant specific results; attach data if necessary)

Sample Matrix: WASTY
DARK BROWN WATERS THAT ARE QUITE VISCOUS. Ran at 100X Fold dilutions
002 - was overcal for acetone and rerun at 200X. 001 and 003 a Hempled
torion more concentrated and blew away 2 ports (10x Fold) will report
dilutions at 100X and 200X. THESE WERE ORIGINALLY LOGGED AS OILS.
ALSO PH'S 27 Screen at 576-001 (10X) in Folder

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

Other Description:

☐ Re-log
☐ Entire Batch
☐ Following Samples:
☐ Re-leach
☐ Re-extract
☐ Re-digest
☐ Revise EDD
☐ Change Test Code to
☐ Place On/Take Off Hold (circle)

4. Project Manager Instructions...signature/date:

☐ Concur with Proposed Action
☒ Disagree with Proposed Action; See Instruction
☒ Include in Case Narrative
☐ Client Contacted:
☐ Date/Person
☐ Add
☐ Cancel

5. Final Action...signature/date:

Other Explanation:

☐ Verified re-[log][leach][extract][digest][analysis] (circle)
☒ Included in Case Narrative
☐ Hard Copy COC Revised
☐ Electronic COC Revised
☐ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route Distribution of Completed SDR

☒ Initiator
☒ Lab General Manager: M. Taylor
☒ Project Mgr: Stone/Johnson/Haslett
☒ Technical Mgr: Wesson/Daniels
☒ QA (file): Alberts
☐ Data Management: Feldman
☐ Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR

☐ Metals: Beegle
☐ Inorganic: Perrone
☐ GC/LC: Kiger
☐ MS: Rychlak/Layman
☐ Log-in: Keppel
☐ Admin: Soos
☐ Other:

GLOSSARY OF VOA DATA

DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.



GLOSSARY OF VOA DATA

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.



Lionville Laboratory, Inc.

Volatiles by GC/MS, HSL List

Report Date: 05/07/01 11:35

RfW Batch Number: 0104L576

Client: TNUHANFORD B01-063 H1323 Work Order: 11343606001 Page: 1a

Cust ID:		B11TV8	B11TV8	B11TV8	B11TV9	B11TW0	VBLKVM
Sample RFW#:		001	001 MS	001 MSD	002	003	01LVH140-MB1
Information Matrix:		WATER	WATER	WATER	WATER	WATER	WATER
D.F.:		100	100	100	200	100	1.00
Units:		UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Toluene-d8		35 * %	95 %	93 %	96 %	91 %	93 %
Surrogate Bromofluorobenzene		92 %	98 %	95 %	82 %	95 %	96 %
Recovery 1,2-Dichloroethane-d4		103 %	88 %	84 %	84 %	83 %	88 %
-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----fl							
Chloromethane		1000 U	1000 U	1000 U	2000 U	1000 U	10 U
Bromomethane		1000 U	1000 U	1000 U	2000 U	1000 U	10 U
Vinyl Chloride		1000 U	1000 U	1000 U	2000 U	1000 U	10 U
Chloroethane		1000 U	1000 U	1000 U	2000 U	1000 U	10 U
Methylene Chloride		320 JB	980 B	980 B	2000 B	340 JB	3 J
Acetone		1000 U	1700	1400	14000	4800	10 U
Carbon Disulfide		500 U	500 U	500 U	1000 U	500 U	5 U
1,1-Dichloroethene		500 U	101 %	100 %	1000 U	500 U	5 U
1,1-Dichloroethane		500 U	500 U	500 U	1000 U	500 U	5 U
1,2-Dichloroethene (total)		500 U	500 U	500 U	1000 U	500 U	5 U
Chloroform		500 U	500 U	500 U	1000 U	500 U	5 U
1,2-Dichloroethane		500 U	500 U	500 U	1000 U	500 U	5 U
2-Butanone		1000 U	1000 U	1000 U	2000 U	1000 U	10 U
1,1,1-Trichloroethane		500 U	500 U	500 U	1000 U	500 U	5 U
Carbon Tetrachloride		500 U	500 U	500 U	1000 U	500 U	5 U
Bromodichloromethane		500 U	500 U	500 U	1000 U	500 U	5 U
1,2-Dichloropropane		500 U	500 U	500 U	1000 U	500 U	5 U
cis-1,3-Dichloropropene		500 U	500 U	500 U	1000 U	500 U	5 U
Trichloroethene		500 U	89 %	89 %	1000 U	500 U	5 U
Dibromochloromethane		500 U	500 U	500 U	1000 U	500 U	5 U
1,1,2-Trichloroethane		500 U	500 U	500 U	1000 U	500 U	5 U
Benzene		500 U	101 %	101 %	1000 U	500 U	5 U
Trans-1,3-Dichloropropene		500 U	500 U	500 U	1000 U	500 U	5 U
Bromoform		500 U	500 U	500 U	1000 U	500 U	5 U
4-Methyl-2-pentanone		1000 U	1000 U	1000 U	2000 U	1000 U	10 U
2-Hexanone		1000 U	1000 U	1000 U	2000 U	1000 U	10 U
Tetrachloroethene		500 U	500 U	500 U	1000 U	500 U	5 U
1,1,2,2-Tetrachloroethane		500 U	500 U	500 U	1000 U	500 U	5 U
Toluene		500 U	109 %	110 %	1000 U	500 U	5 U

* = Outside of EPA CLP QC limits.

	Cust ID:	B11TV8	B11TV8	B11TV8	B11TV9	B11TW0	VBLKVM	
RFW#:		001	001 MS	001 MSD	002	003	01LVH140-MB1	
Chlorobenzene		500 U	99 %	98 %	1000 U	500 U	5 U	U
Ethylbenzene		500 U	500 U	500 U	1000 U	500 U	5 U	U
Styrene		500 U	500 U	500 U	1000 U	500 U	5 U	U
Xylene (total)		500 U	500 U	500 U	210 J	500 U	5 U	U

*= Outside of EPA CLP QC limits.

Report Date: 05/07/01 11:35

Client: **TNUHANFORD B01-063 H1323** Work Order: 11343606001 Page: 2a

VBLKVN BS

[illegible]

*= Outside of EPA CLP QC limits.

Cust ID: VBLKVN

VBLKVN BS

RFW#: 01LVH142-MB1 01LVH142-MB1

Chlorobenzene	5	U	94	%
Ethylbenzene	5	U	5	U
Styrene	5	U	5	U
Xylene (total)	5	U	5	U

*= Outside of EPA CLP QC limits.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B11TV8

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B01-063 H1323

Matrix: WATER

Lab Sample ID: 0104L576-001

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: h042410

Level: (low/med) LOW

Date Received: 04/20/01

% Moisture: not dec.

Date Analyzed: 04/24/01

Column: (pack/cap) CAP

Dilution Factor: 100

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B11TV9

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B01-063 H1323

Matrix: WATER

Lab Sample ID: 0104L576-002

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: h042417

Level: (low/med) LOW

Date Received: 04/20/01

% Moisture: not dec.

Date Analyzed: 04/24/01

Column: (pack/cap) CAP

Dilution Factor: 200

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B11TW0

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B01-063 H1323

Matrix: WATER

Lab Sample ID: 0104L576-003

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: h042412

Level: (low/med) LOW

Date Received: 04/20/01

% Moisture: not dec.

Date Analyzed: 04/24/01

Column: (pack/cap) CAP

Dilution Factor: 100

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

VBLKVM

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B01-063 H1323

Matrix: WATER

Lab Sample ID: 01LVH140-MB1

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: h042405

Level: (low/med) LOW

Date Received: 04/24/01

% Moisture: not dec.

Date Analyzed: 04/24/01

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=====	=====	=====	=====	=====
1.				

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

VBLKVN

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD B01-063 H1323

Matrix: WATER

Lab Sample ID: 01LVH142-MB1

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: h042508

Level: (low/med) LOW

Date Received: 04/25/01

% Moisture: not dec.

Date Analyzed: 04/25/01

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	22.142	30	J
2.	UNKNOWN	25.439	5	J

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

ALL

[illegible][illegible]

Run Matrix QC

Mr. H. 1. Al, Ag, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K.
I 2. Mg, Mn, Na, Ni, Sb, V, Zn, As, Pb.
3. Sc, Ti, Hg
4-27-01 4. Matrix changed to Water per PM.
5.
6.

Lionville Laboratory Use Only

Samples were:

1) Shipped ☒ or
Hand Delivered _____
Airbill # 12351954.3808

2) Ambient or Chilled
3) Received in Good Condition ☒ or N
4) Samples Properly Preserved ☒ or N
5) Received Within Holding Times ☒ or N

Tamper Resistant Seal was:

1) Present on Outer Package ☒ or N
2) Unbroken on Outer Package ☒ or N
3) Present on Sample ☒ or N
4) Unbroken on Sample ☒ or N
COC Record Present Upon Sample Rec'd ☒ or N
Cooler Temp. 60.1 °C

Relinquished by	Received by	Date	Time
Felix	Thoppel	4/20/01	0920

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL		

Discrepancies Between
Samples Labels and
COC Record? Y or N

4235 7954 3808

ORIGINAL
REWRITTEN

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B01-063-4		Page <u>1</u> of <u>1</u>		
Collector THOMAS GS		Company Contact LERCH JA		Telephone No. 509-373-5904		Project Coordinator TRENT, SJ		Price Code 3D Data Turnaround		
Project Designation 600-23 Anomalous Waste Characterization - Other Liquid		Sampling Location 600-23 DIG SITE		SAF No. B01-063		Air Quality <input type="checkbox"/>		7 days		
Ice Chest No. BH1-94 20f2)		Field Logbook No. EL-1518		COA R600232E00		Method of Shipment FED EX				
Shipped To TMA/RECRA		Offsite Property No. A010250		Bill of Lading/Air Bill No. 42367954-3808						
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation		A Cool 4C	C None	B Cool 4C		
				Type of Container		Gs*	24H	aG		
				No. of Container(s)		1	1	1		
				Volume		40mL	120mL	1000mL		
Special Handling and/or Storage				VOA - 8260A (TCL)		pH (Soil) - 9045		Semi-VOA - 8270A (TCL)		
SAMPLE ANALYSIS										
Sample No.	Matrix *	Sample Date	Sample Time							
B11TV8	OTHER LIQUID	4/16/01	0807	X	X	X			B11TV0	
B11TV9	OTHER LIQUID	4/16/01	0825	X	X	X			B11TV1	
B11TW0	OTHER LIQUID	4/16/01	0910	X	X	X			B11TV2	
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS				
Relinquished By <i>Greg Thomas</i>		Date/Time 4/16/01 1530		Received By <i>Greg Thomas</i>		Date/Time 4/16/01 1530		<p>Samples stored in Ref. # 2B at the 3728 Shipping Facility on 4/16/01. Collector not available to relinquish samples on 4/14/01 for shipment.</p> <p style="text-align: right;">RT 4/19/01</p>		
Relinquished By <i>Greg Thomas</i>		Date/Time 4/16/01 0930		Received By <i>Store in Ref 2B</i>		Date/Time 4/16/01 0930				
Relinquished By <i>R. T. L. Thoren</i>		Date/Time 4/19/01 0930		Received By <i>R. T. L. Thoren</i>		Date/Time 4/19/01 0930				
Relinquished By <i>R. T. L. Thoren</i>		Date/Time 4/19/01 0930		Received By <i>FE O A Y</i>		Date/Time				
Relinquished By <i>FE O A Y</i>		Date/Time 4/20/01 0920		Received By <i>TRapp</i>		Date/Time 4/20/01 0920				
Relinquished By		Date/Time		Received By		Date/Time				
Relinquished By		Date/Time		Received By		Date/Time				
Relinquished By		Date/Time		Received By		Date/Time				
LABORATORY SECTION		Received By		Title		Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time				

Dechtel Han		Company Contact LERCH JA		Telephone No. 509-373-5904		Project TRENT, SJ		Price Code 50	
Collecting Agency COMAS GS		Project Designation 600-23 Anomalous Waste Characterization - Other Liquid		Sampling Location 600-23 DIG SITE		SAF No. B01-063		Air Quality <input type="checkbox"/> 7 days <input checked="" type="checkbox"/>	
Ice Chest No. BH1-94 (2 of 2)		Field Logbook No. EL-1518		COA R600232E00		Method of Shipment FED EX			
Shipped To TMA/RECKA		Offsite Property No. A010250		Bill of Lading/Air Bill No. 42357954					

POSSIBLE SAMPLE HAZARDS/REMARKS Special Handling and/or Storage	Preservation	C None	E None	D Cool 4C		Sample originally sent to RCF for on site analysis. Page 2 of 1 represents custody transfer to RCF. The sample was picked up from RCF and re-labeled for off-site analysis. A new COC was generated for appropriate off site custody transfer. Page 1 of 2 represents custody transfer to offsite laboratory for directed analysis.
	Type of Container	P	Br 41/16	AG		
	No. of Container(s)	1	1	1		
	Volume	120mL	300mL 500mL	1000mL		

SAMPLE ANALYSIS				pH (Soil) - 9045	See item (1) in Special Instructions.	PCBs - 8082													
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Sample No.	Matrix *	Sample Date	Sample Time																
B11TW1	OTHER LIQUID	4/14/01	1220	X	X	X													
B11TW2	OTHER LIQUID	RT 4/19/01																	

CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix * S Soil SL Sediment SS Solid S Sludge W Water L Oil A Air DS Drum Solids LH - Heavy Liquids T Tissue WL Waste L Liquid V Vegetation A Other	
Relinquished By		Date/Time		Sign/Print Names		Date/Time			
Greg Thomas		4/14/01 1530		Greg Thomas		4/14/01 1530			
Relinquished By		Date/Time		Sign/Print Names		Date/Time			
Ref 2B 3728		4/19/01		B. J. R. Thomas		4/19/01			
Relinquished By		Date/Time		Sign/Print Names		Date/Time			
F. J. R. Thomas		4/19/01		F. J. R. Thomas		4/19/01			
Relinquished By		Date/Time		Sign/Print Names		Date/Time		Samples stored in Ref. # 2B at the 3728 Shipping Facility on 4/16/01. Collector not available to relinquish samples on 4/19/01 for shipment.	
F. J. R. Thomas		4/19/01		F. J. R. Thomas		4/19/01			
Relinquished By		Date/Time		Sign/Print Names		Date/Time			
F. J. R. Thomas		4/19/01		F. J. R. Thomas		4/19/01			
Relinquished By		Date/Time		Sign/Print Names		Date/Time			
F. J. R. Thomas		4/19/01		F. J. R. Thomas		4/19/01			

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time